

## ABSTRACT OF THE DISCLOSURE

A system for controlling a gas-turbine engine having a combustor which generates a combustion such that resulting combustion gas rotates a turbine that is connected to the compressor and a load such as a generator to drive the compressor and the generator.

- 5 In the system, the oxygen concentration of the resulting combustion gas is detected and the adiabatic flame temperature is calculated based on at least the detected oxygen concentration such that the combustion mode is switched between the premix combustion and the diffusive combustion by calculated temperature. With this, the system, when operated using a gas fuel whose composition is not constant can control the fuel supply through a
- 10 multiple venturi mixer, while avoiding flame-out and operate stably in response to load demand and achieving excellent emission performance. Further, the system can control the fuel supply without the need to detect the throat pressure of the multiple venturi mixer, even when suffered from the influence of the mixer outlet pressure and some similar factors.